

PROGRAM CODE

```
#include <stdio.h>
void main()
{
    int n, m, i, j, k;
    printf("Number Of Processes = ");
    scanf("%d",&n);
    printf("Number Of Resources = ");
    scanf("%d",&m);

    int alloc[n][m];
    int max[n][m];
    int avail[m];

    printf("ALLOCATED MATRIX \n");
    for(int i=0;i<n;i++){
        for(int j=0;j<m;j++){
            scanf("%d",&alloc[i][j]);
        }
    }
    printf("MAX MATRIX \n");
    for(int i=0;i<n;i++){
        for(int j=0;j<m;j++){
            scanf("%d",&max[i][j]);
        }
    }
    printf("AVAILABLE RESOURCES\n");
    scanf("%d %d %d %d",&avail[0],&avail[1],&avail[2],&avail[3]);

    int f[n], ans[n], ind = 0;
    for (k = 0; k < n; k++) {
        f[k] = 0;
    }
    int need[n][m];
    for (i = 0; i < n; i++) {
        for (j = 0; j < m; j++)
            need[i][j] = max[i][j] - alloc[i][j];
    }
    int y = 0;
    for (k = 0; k < 5; k++) {
        for (i = 0; i < n; i++) {
            if (f[i] == 0) {
                int flag = 0;
                for (j = 0; j < m; j++) {
                    if (need[i][j] > avail[j]){
                        flag = 1;
                        break;
                    }
                }
                if (flag == 0) {
                    ans[ind++] = i;
                    for (y = 0; y < m; y++)
                        avail[y] += alloc[i][y];
                    f[i] = 1;
                }
            }
        }
    }
}
```

```

    }
}

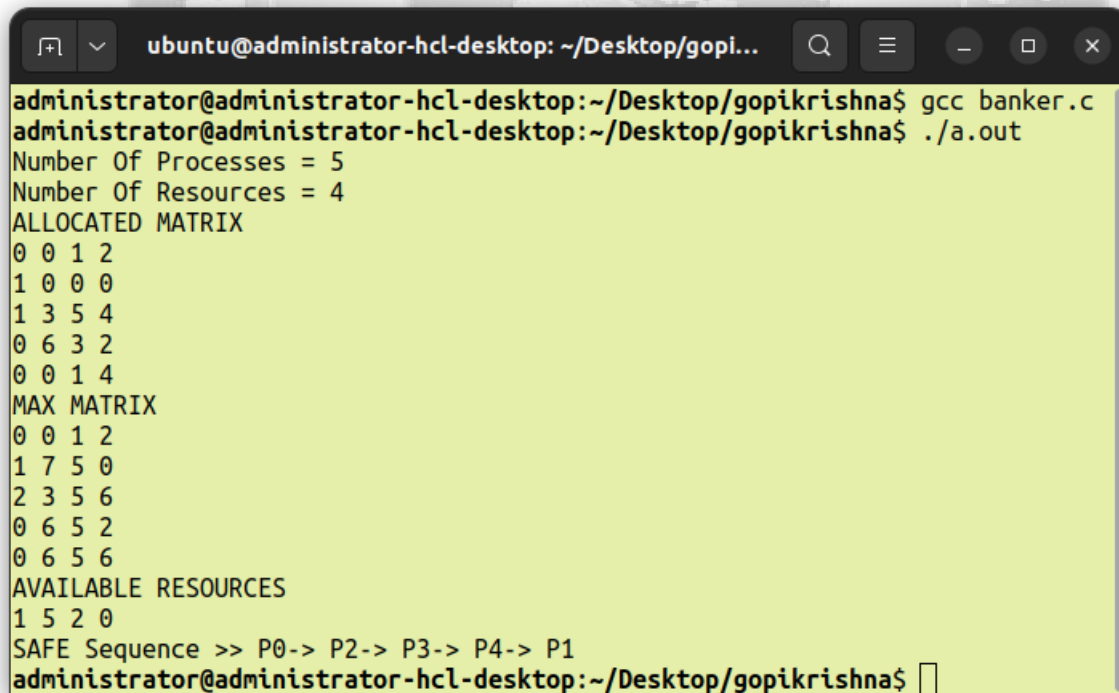
int flag = 1;

for(int i=0;i<n;i++)
{
    if(f[i]==0)
    {
        flag=0;
        printf("SYSTEM NOT SAFE");
        break;
    }
}

if(flag==1)
{
    printf("SAFE Sequence >> ");
    for (i = 0; i < n - 1; i++)
        printf("P%d-> ", ans[i]);
    printf("P%d\n", ans[n - 1]);
}
}

```

OUTPUT



```

ubuntu@administrator-hcl-desktop: ~/Desktop/gopi...
administrator@administrator-hcl-desktop:~/Desktop/gopikrishna$ gcc banker.c
administrator@administrator-hcl-desktop:~/Desktop/gopikrishna$ ./a.out
Number Of Processes = 5
Number Of Resources = 4
ALLOCATED MATRIX
0 0 1 2
1 0 0 0
1 3 5 4
0 6 3 2
0 0 1 4
MAX MATRIX
0 0 1 2
1 7 5 0
2 3 5 6
0 6 5 2
0 6 5 6
AVAILABLE RESOURCES
1 5 2 0
SAFE Sequence >> P0-> P2-> P3-> P4-> P1
administrator@administrator-hcl-desktop:~/Desktop/gopikrishna$

```